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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/716,980	11/14/2003	May L. Chan	95946	6845

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NAVAIRWD  
COUNSEL GROUP (CODE K0000D)  
1 ADMINISTRATION CIRCLE  
CHINA LAKE, CA 93555-6100

EXAMINER

HARDEE, JOHN R

ART UNIT PAPER NUMBER

1751

DATE MAILED: 05/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/716,980

Applicant(s)

CHAN ET AL.

Examiner

John R. Hardee

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 14-22 is/are rejected.
- 7) ☐ Claim(s) 13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 11142003.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Specification*

1. The disclosure is objected to because of the following informalities: The terms "dinitrazaundecanoate" and "polyglycidyl" are misspelled in the claims and the body of the specification. While it is clear what applicant means, having such misspellings in the printed patent or application might preclude retrieval of this disclosure in the future. In claims 13 and 21, "n-n-" should be "n-".

Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 1-12 and 14-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Highsmith et al. US 6,362,311 B1 in view of Day et al., US 4,916,206

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and Wood et al., US 6,074,581. Highsmith discloses minimum-smoke propellants comprising 4-30% by weight of binder; 40-80% by weight of oxidizer, 0-50% of energetic solid fuels and 0-30% of plasticizers other than PGN (col. 6, lines 21+). Suitable oxidizers include ADN (col. 7, lines 8-9). Suitable plasticizers include TMETN (col. 7, line 35), alkyl NENA compounds (col. 7, line 39) and BTTN (col. 7, line 38). Suitable solid fuels include CL-20 (col. 7, line 21). Isocyanate curatives may be added (col. 7, line 41), as may dibutyltin dilaurate (col. 7, line 43). While TMETN plasticizer is disclosed in the context of high-solids extrudable explosives, the examiner notes that this is the only list of plasticizers in the reference, and that a fair reading of the reference would suggest that these plasticizers are therefore suitable for minimum-smoke propellants as well. A list of representative energetic binders is disclosed, but ORP is not among them. A particle size for ADN is not disclosed.

Day et al. teaches the utility of a family of nitramine-containing polymers for use in propellants and explosives. Among these is 4,8-dinitraza-1,11-undecanedioic acid (DNUDA). It would have been obvious at the time that the invention was made to incorporate DNUDA (ORP) into the minimum-smoke propellant of Highsmith et al., because Highsmith et al. discloses that energetic binders generally may be added, and Day et al. teaches that DNUDA is a useful energetic binder in propellants.

Wood et al. teaches a method for prilling ADN in particle sizes of 50-350 microns. It would have been obvious at the time that the invention was made to use the prills of Wood et al. in the minimum-smoke propellants of Highsmith et al., because Highsmith

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discloses that ADN is useful therein, and Wood teaches a method of making prills of the recited diameter which are made safely and may be stabilized for safety reasons.

***Allowable Subject Matter***

5. Claim 13 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter: The closest prior art of record is the references relied upon above. They do not make obvious the use of polycaprolactone.

7. Any prior art made of record and not relied upon is of interest and is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to the examiner, Dr. John R. Hardee, whose telephone number is (571) 272-1318. The examiner can normally be reached on Monday through Friday from 8:00 until 4:30. In the event that the examiner is not available, his supervisor, Dr. Yogendra Gupta, may be reached at (571) 272-1316.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

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published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "J. Hardee", written in a cursive style.

John R. Hardee  
Primary Examiner  
May 3, 2004